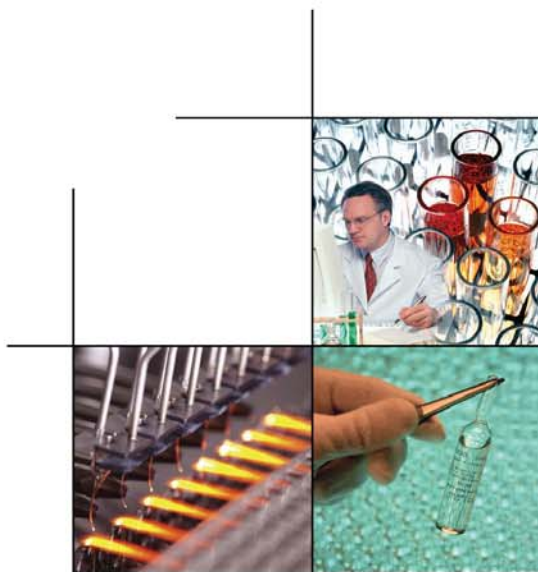


## *Quality Standards Calculator User Manual*



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## ***System Requirements:***



### ***Quality Standards Calculator***

***Ansi/ASQ z1.4-2003 Sampling Plan Software***

***Quality Standards Calculator QSC 2.2 requires  
one of the following operating systems:***

***Microsoft® Windows 98/Me/NT4/2000/XP***

(Quality Standards Calculator QSC 2.2 is not compatible  
with MAC, Linux, or any other non-Microsoft operating system.)

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## **Before you begin:**

Before you begin, you should close all open programs on your computer.



## **SMB Standards Calculator** **Ansi/ASQ z1.4-2003 Sampling Plan Software**

Take a note of the CD-key and User Name. The CD-key and User Name are located (laser inscribed) on the surface cover of the disc.

## **To install;**

You are now only eight short steps from being able to use QSC 2.2.

You can install QSC 2.2 from a CD (recommended) or a file downloaded directly from the SMB website.

Insert the CD into the CD-ROM, or DVD-ROM drive.

The installation process should start immediately and automatically.

However, if it does not, or if you have the AUTORUN feature disabled, access the START MENU, go to your RUN command and type:

***X:|setup.exe***

(Replace the letter X with the letter of your CD-ROM drive)

The setup Wizard will begin. Follow the prompts and QSC 2.2 will be installed in your system.

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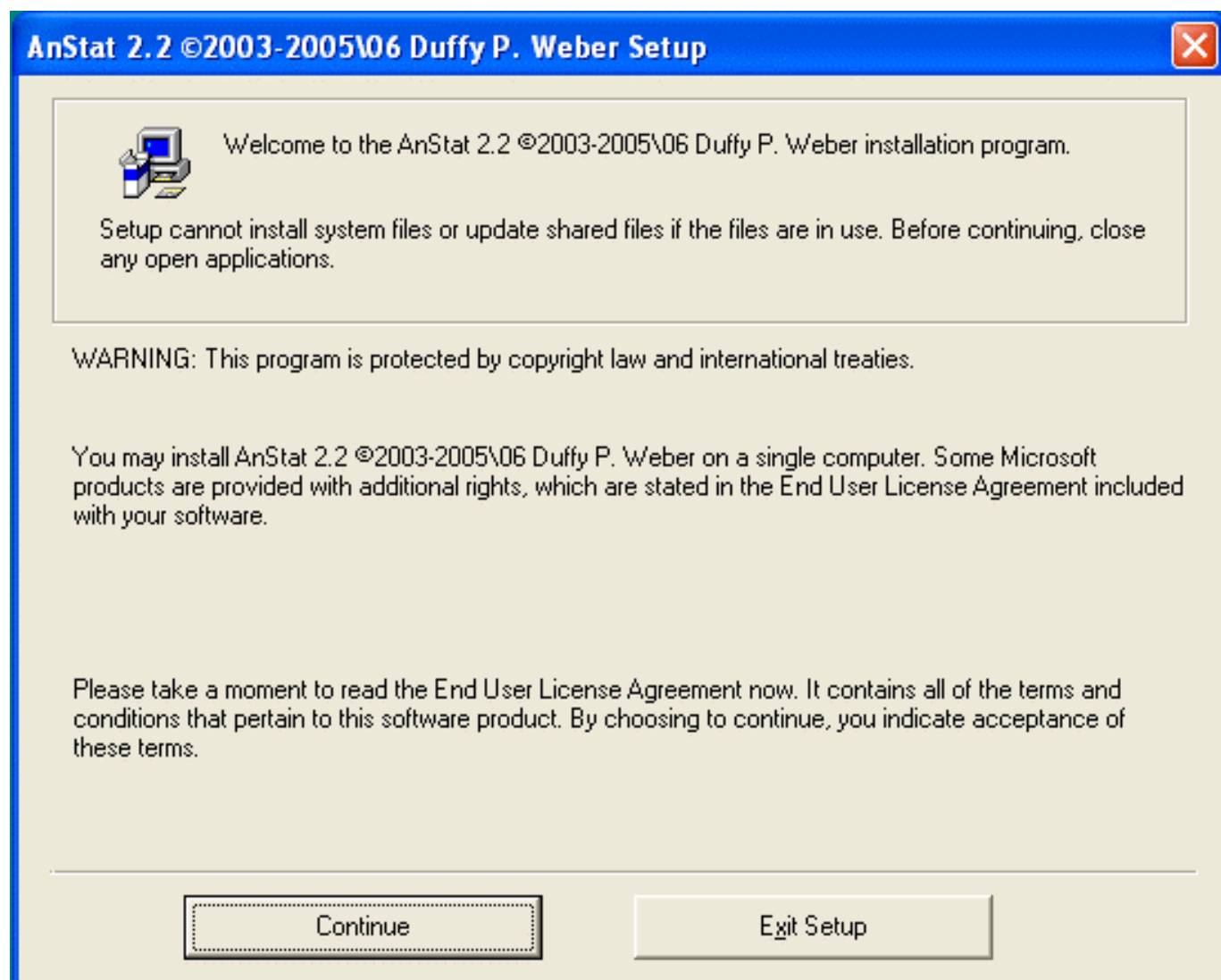
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## Step 1

Read the End User License agreement.

Press the **CONTINUE** button to begin the Set Up.

Press the **EXIT SETUP** button to cancel the installation.



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## Step 2

Enter your name and Organization.

Press the **OK** button to continue.

Press the **EXIT SETUP** button to cancel the installation.

**Name and Organization Information**

Enter your full name in the box below. You may also enter the name of your organization. Setup will use this information for subsequent installations of the product.

Name:

Organization:

OK Exit Setup

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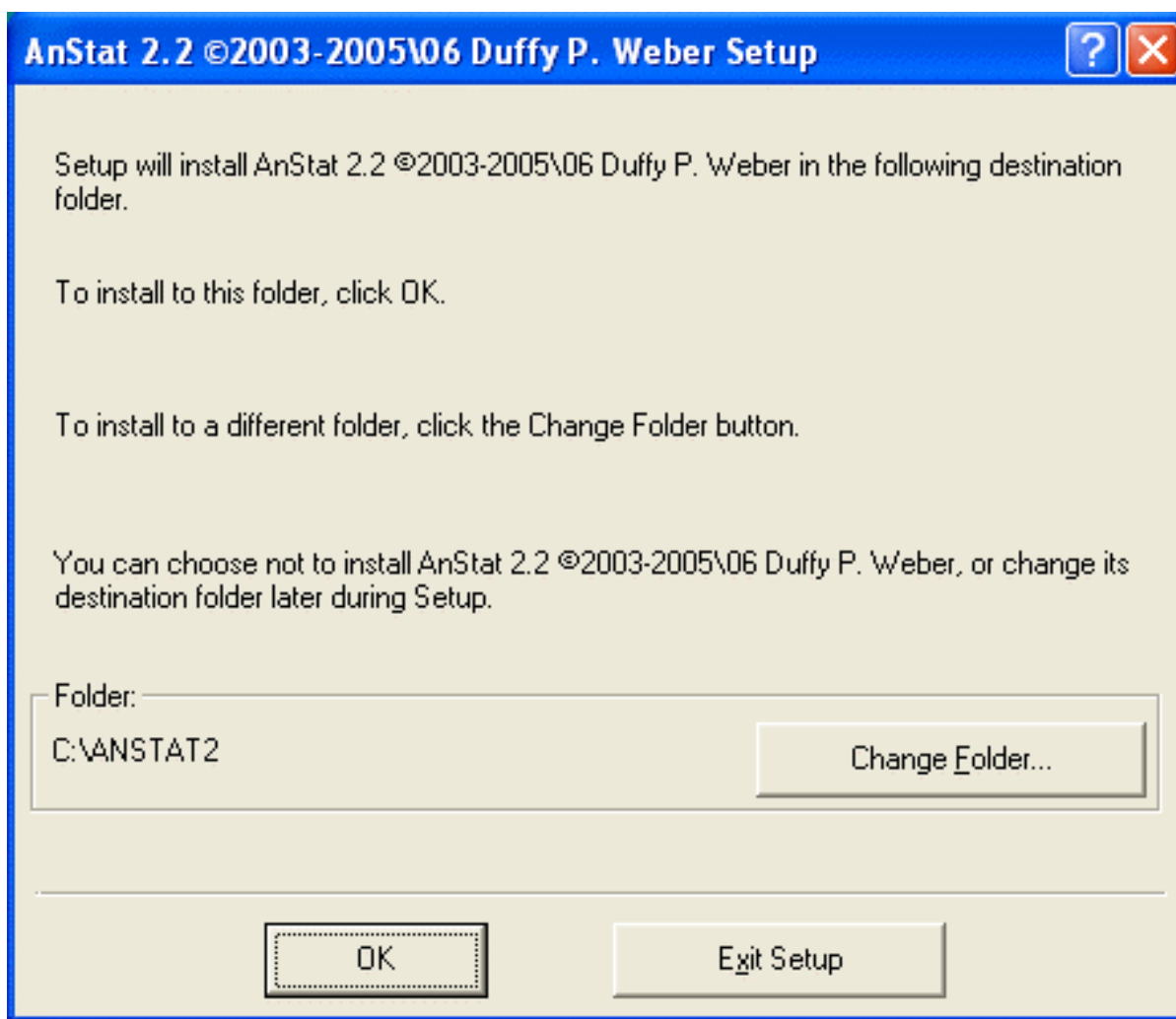
## Step 3

Choose the destination folder in which you want QSC 2.2 will be installed.

Press the **OK** button to install to C:/

Press the **CHANGE FOLDER** button to select an alternate folder destination.

Press the **EXIT SETUP** button to cancel the installation.



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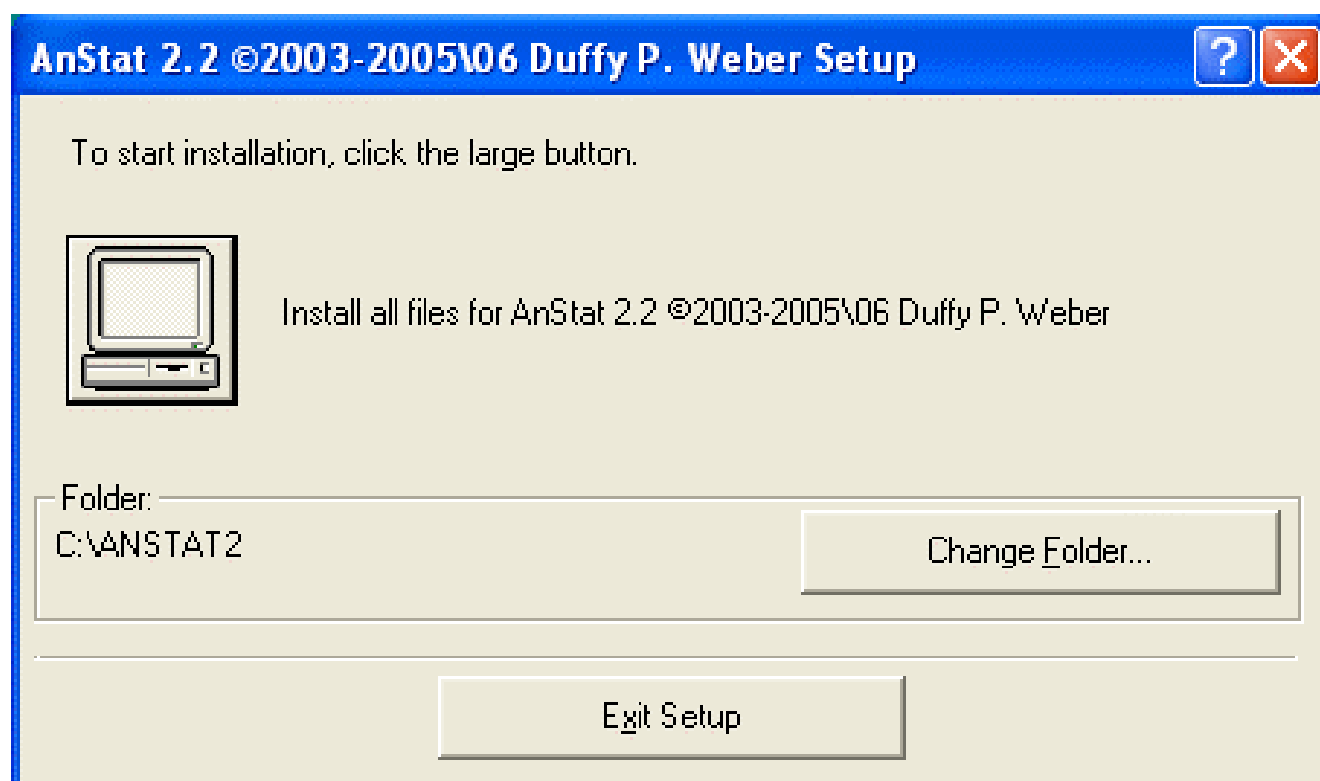
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## Step 4

Press the large (computer icon) button to install QSC 2.2 files to destination folder.

Press the **CHANGE FOLDER** button to select an alternate folder destination.

Press the **EXIT SETUP** button to cancel the installation.





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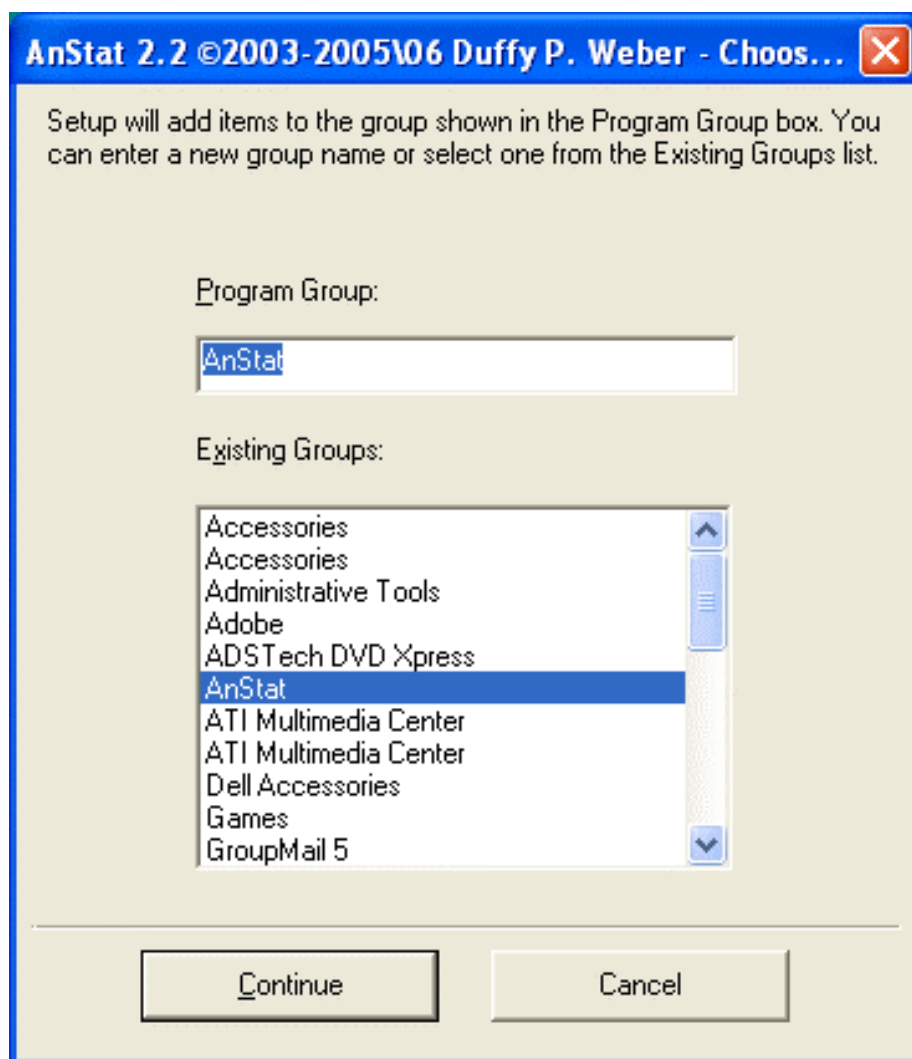
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## Step 5

Select an existing program group or create a new group.

Press the **CONTINUE** button to add to the selected group.

Press the **CANCEL** button to cancel the installation.





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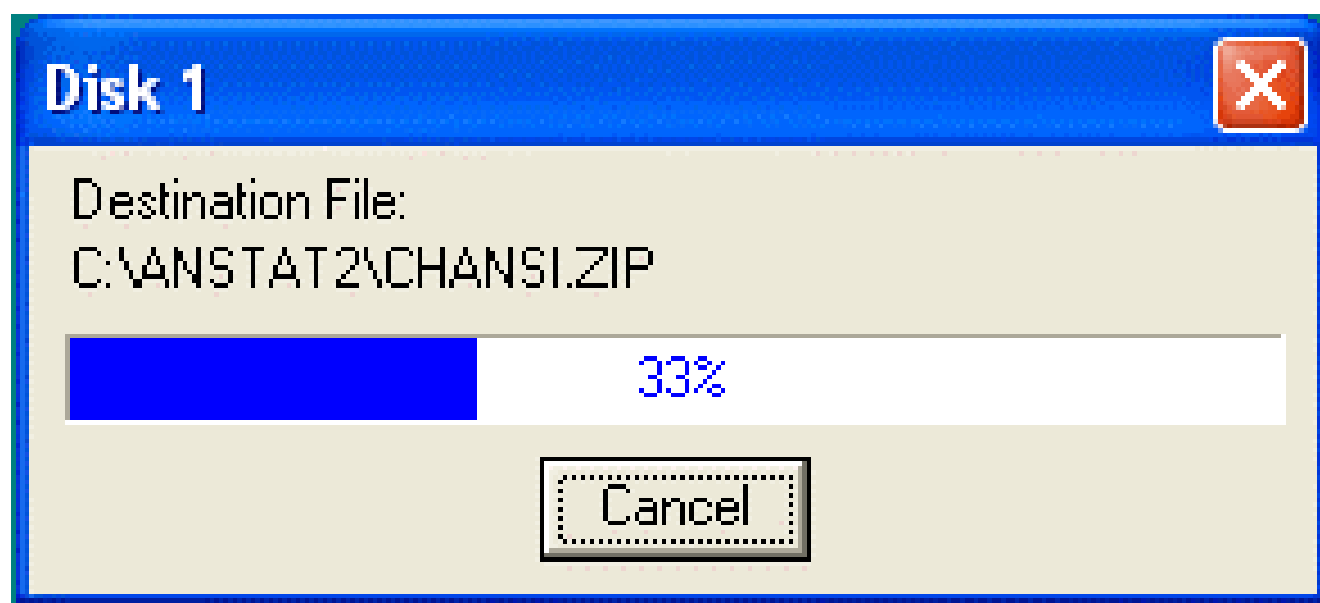
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## Step 6

The program files will now be transferred to the selected destination folder and group. Transfer status will be indicated as shown in the example below.

Press the **CANCEL** button to cancel the installation.



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## Step 7

When the program files have been transferred to the selected destination folder and group. Transfer status will be indicated as shown in the example below.

Press the **OK** button to complete the installation.



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## Step 8

Enter the User Name and CD-Key (as printed on the front of the CD).  
Press the **AUTHORIZE** button to complete the installation.

**Please Enter Product Key:**

Please enter company name and registration code:

**Authorize!**

To run QSC 2.2, simply go to your Windows “Start” menu, select “Programs”, then go to the “QSC 2.2” section, and choose “QSC 2.2”.

### NOTES:

An instruction manual, should you need one, is located in the root directory of the CD in PDF format or from the SMB website at <http://smbvalidation.com/eliterature.html>

If you have any questions or comments, please feel free to contact us any time at [QSCComments@smbvalidation.com](mailto:QSCComments@smbvalidation.com)

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To run QSC 2.2, simply go to your Windows “Start” menu, select “Programs”, then go to the “QSC 2.2” section, and choose “QSC 2.2. Alternately, double click on the QSC 2.2 Icon.



QCS will open to display the “SELECT A LOT SIZE SCREEN”

**Select a Lot Size**

2 to 8  
9 to 15  
16 to 25  
26 to 50  
51 to 90  
91 to 150  
151 to 280  
281 to 500  
501 to 1200  
1201 to 3200  
3201 to 10000  
10001 to 35000  
35001 to 150000  
150001 to 500000  
500001 +

**Special Inspection Levels**  
☒ S-1  
☐ S-2  
☐ S-3  
☐ S-4

**General Inspection Levels**  
☐ I (One)  
☐ II (Two)  
☐ III (Three)

Code Letter: A

Normal Single Inspection  
Tightened Single Inspection  
Reduced Single Inspection

Normal Double Inspection  
Tightened Double Inspection  
Reduced Double Inspection

Normal Multiple Inspection  
Tightened Multiple Inspection  
Reduced Multiple Inspection

About Exit

Create Item Profile Use Item Profile

Make Log Entry

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Press the **ABOUT** button.

The **ABOUT** screen displays the software version number of the Quality Standards Calculator.



Press **EXIT** to return to the “**SELECT A LOT SIZE SCREEN**”.

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From the **SELECT A LOT SIZE** screen a lot size range menu is displayed.

**Select a Lot Size**

2 to 8  
9 to 15  
16 to 25  
26 to 50  
51 to 90  
91 to 150  
151 to 280  
281 to 500  
501 to 1200  
1201 to 3200  
3201 to 10000  
10001 to 35000  
35001 to 150000  
150001 to 500000  
500001 +

**Special Inspection Levels**

☒ S-1  
☐ S-2  
☐ S-3  
☐ S-4

**General Inspection Levels**

☐ I (One)  
☐ II (Two)  
☐ III (Three)

Code Letter: A

Normal Single Inspection  
Tightened Single Inspection  
Reduced Single Inspection

Normal Double Inspection  
Tightened Double Inspection  
Reduced Double Inspection

Normal Multiple Inspection  
Tightened Multiple Inspection  
Reduced Multiple Inspection

About Exit

Create Item Profile Use Item Profile

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The **LOT SIZE** is the number of production units from which sample is to drawn and inspected. Select the range that is appropriate for the **LOT** or **BATCH** of product units.

For example: if you have a **LOT** or **BATCH** size of 2800 units. Select **1201- 3200**.

2	to	8
9	to	15
16	to	25
26	to	50
51	to	90
91	to	150
151	to	280
281	to	500
501	to	1200
1201	to	3200
3201	to	10000
10001	to	35000
35001	to	150000
150001	to	500000
500001	+	

The Quality Standards Calculator provides for three general inspection levels and four special inspection levels. These seven levels permit the user to balance the cost of inspection against the amount of protection required.

From the **GENERAL INSPECTION LEVELS** menu select the required general inspection level.

General Inspection Level

☒ **I (One)**

☐ **II (Two)**

☐ **III (Three)**

Or, from the **SPECIAL INSPECTION LEVELS** menu select the required inspection level.

Special Inspection Level

☒ **S-1**

☐ **S-2**

☐ **S-3**

☐ **S-4**



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Once an inspection level is selected the **CODE LETTER** field located immediately below the **INSPECTION LEVEL** Menu will automatically be populated.

Example: for a **LOT** or **BATCH** size of 2800 and a **GENERAL INSPECTION LEVEL** of 1 (One) the **CODE LETTER H** will be automatically populated.

Code Letter **H**

Select the required Inspection scheme.

Normal Single Inspection

Tightened Single Inspection

Reduced Single Inspection

Normal Double Inspection

Tightened Double Inspection

Reduced Double Inspection

Normal Multiple Inspection

Tightened Multiple Inspection

Reduced Multiple Inspection

**Normal inspection** is that which is used where there is no evidence that the quality of product being submitted is better or poorer than the specified quality level.

**Tightened inspection** under a sampling procedure plan uses the quality level as for normal inspection, but requires more stringent acceptance criteria.

**Reduced inspection** under a sampling plan uses the same quality level as for normal inspection, but requires a smaller sample for inspection.

A **single sampling plan** is a type of sampling plan by which the results of a single sample from an inspection lot are conclusive in determining acceptability. The number of sample units inspected shall be equal to the sample size given by the plan.

A **double sampling plan** involves sampling inspection in which the inspection of the first sample to a decision to accept, to reject or to take a second sample. The inspection of a second sample, when required, leads to a decision to accept or reject.

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The **INSPECTION LEVEL**: screen.

The **CODE LETTER** and **SAMPLE SIZE** will be displayed in the top Left Hand Upper quadrant of the **INSPECTION LEVEL SCREEN**.

The **SAMPLE SIZE** is the number of units of product that will be drawn from the **LOT** or **BATCH**. Samples should be drawn at random throughout the **LOT** or **BATCH** without regard to their quality.

**Inspection Level: Normal**

Code Letter:  Sample size:

---

*Select an Acceptable Quality Level (AQL)*

0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

---

ACCEPTABLE:  REJECT BATCH IF  OR MORE ARE UNSATISFACTORY

Select an **ACCEPTABLE QUALITY LIMIT (AQL)** to calculate the **ACCEPT/REJECT RATE**. The AQL is the quality limit that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling.

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The AQL is the quality limit that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling.

Code Letter:  Sample size:

---

**Select an Acceptable Quality Level (AQL)**

Sample: <input checked="" type="radio"/> First <input type="radio"/> Second	0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5
	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000

---

ACCEPTABLE:  REJECT BATCH IF  OR MORE ARE UNSATISFACTORY

77777 = Acceptance not permitted on this sample size  
99999 = Use corresponding single sampling plan  
88888 = Use corresponding double sampling plan

The concept of AQL only applies when an acceptance sampling scheme with rules for switching between normal, tightened and reduced inspection and discontinuance of sampling inspection is used. These rules are designed to encourage suppliers to have process averages consistently better than the AQL. If suppliers fail to do so, there is a high probability of being switched from normal inspection to tightened inspection where lot acceptance becomes more difficult. Once on tightened inspection, unless corrective action is taken to improve product quality, it is very likely that the rule requiring discontinuance of sampling inspection will be invoked.

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**Multiple Inspection Level: Normal/Regular**

Code Letter:  Sample size:

---

**Select an Acceptable Quality Level (AQL)**

Sample:	0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5
<input checked="" type="radio"/> First (1st)													
<input type="radio"/> Second (2nd)													
<input type="radio"/> Third (3rd)													
<input type="radio"/> Fourth (4th)	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
<input type="radio"/> Fifth (5th)													
<input type="radio"/> Sixth (6th)													
<input type="radio"/> Seventh (7th)													

---

ACCEPTABLE:  REJECT BATCH IF  OR MORE ARE UNSATISFACTORY

77777 = Acceptance not permitted on this sample size  
99999 = Use corresponding single sampling plan  
88888 = Use corresponding double sampling plan

Although individual lots with quality as bad as the AQL can be accepted with fairly high probability, the designation of an AQL does not suggest that this is necessarily a desirable quality level. The AQL is a parameter of the sampling scheme and should not be confused with a process average which describes the operating level of a manufacturing process. It is expected that the product quality level will be less than the AQL to avoid excessive non accepted lots.

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From the **SELECT A LOT SIZE** screen press the **ADD A PROFILE** button to access the **ADD A PROFILE** screen.

The **ADD A PROFILE** screen allows the user to input the following item data to create a sampling profile:

Item #

Item Number

Lot Size

Inspection Type (Normal, Tightened or Reduced)

# Concurrent “good” to reduce

# Concurrent “fail” to tighten

Press the **SAVE PROFILE** button to save the sampling profile for future use.

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From the **SELECT A LOT SIZE** screen press the **SELECT A PROFILE** button to access the **SELECT A PROFILE** screen.

Use the menu slider to select a previously saved sampling profile. Once an item number is selected the **CODE LETTER** is automatically populated in the code letter field located below the menu slider and the item name is automatically displayed.

Select the required Inspection scheme.

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From the **SELECT A LOT SIZE** screen or any of the **INSPECTION LEVEL** screens press the **MAKE LOG ENTRY** button to access the **ENTER LOG DATA** screen.

**Enter Log Data**

Date:  <Today

Lot No.

Item No.

Misc. No.

Pass ☐ Fail ☐

☒ Normal ☐ Reduced ☐ Tightened

Save Log

Print Logs...

Exit

Backup/Export Restore/Import



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The **ENTER LOG DATA** screen allows the user to input the following data to create a sampling log, import or export log data and print the sampling result:

Enter the date of sampling into the Date Field:

Enter the **LOT** or **BATCH** number

Enter the Item Number

Select **PASS** or **FAIL**

Select (Normal, Tightened or Reduced)

Press the **SAVE LOG** button to save the sampling log for future use.

Press the **PRINT LOGS** button to print the sampling results.

Press the **BACKUP/EXPORT** button to select the backup/export folder destination.

Press the **RESTORE/IMPORT** button to select the previously backed up data storage location and name.